

4. (Amended) An alkoxyated, condensed basic amino acid-containing polymer as claimed in claim 1, comprising a cocondensate of one or more basic amino acids and a cocondensable compound, wherein the cocondensable compound is selected from the group consisting of a compound containing one or more carboxylic acid groups, a carboxylic anhydride, a diketene, an amine, a lactam, an alcohol, an alkoxyated alcohol and an alkoxyated amines.

5. (Amended) An alkoxyated, condensed basic amino acid-containing polymer as claimed in claim 1, wherein the condensed basic amino acid-containing polymers are obtained by condensing

a²
(a) lysine alone or

(b) lysine and at least one compound selected from the group consisting of palmitic acid, stearic acid, lauric acid, octanoic acid, propionic acid, acetic acid, 2-ethylhexanoic acid, adipic acid, succinic acid, citric acid and mixtures thereof.

6. (Amended) An alkoxyated, condensed basic amino acid-containing polymer as claimed in claim 1, wherein the condensed basic amino acid-containing polymer is obtained by condensing

(a) lysine together with

(b) at least one compound selected from the group consisting of 1,6-hexandiamine, octylamine, aminocaproic acid, aminolauric acid, ϵ -caprolactam, laurolactam, and a C₁₄-/C₂₂-alkyldiketene.

15. (Amended) An alkoxyated, condensed basic amino acid-containing polymer as claimed in claim 1, obtained by reacting the basic amino acid-containing polymer with at

a³

least one alkylating agent selected from the group consisting of an alkyl halide, a benzyl halide and a dialkyl sulfate.

16. (Amended) A process for the production of an alkoxylated, condensed basic amino acid-containing polymer, which comprises

reacting one or more of a

homocondensate of a basic amino acid,

a condensate of a mixture of two or more basic amino acids, or

a cocondensate of one or more basic amino acids and one or more cocondensable compounds,

with at least one alkylene oxide selected from the group consisting of a C₂- to C₃₀-alkylene oxide and styrene oxide.

17. (Amended) A process as claimed in claim 16, wherein the alkylene oxide is selected from the group consisting of ethylene oxide, propylene oxide and butylene oxide.

19. (Amended) A process as claimed in claim 16, further comprising reacting the polymer with an alkylating agent selected from the group consisting of an alkyl halide, a benzyl halide and a dialkyl sulfate.

20. (Amended) A process as claimed in claim 16, further comprising: reacting the polymer with a compound selected from the group consisting of benzyl chloride, methyl chloride, ethyl chloride, lauryl chloride, palmityl chloride, stearyl chloride, methyl iodide, dimethyl sulfate and diethyl sulfate.

BASIS FOR THE AMENDMENT

Claims 1-20 are active in the present application. The claims have been amended for clarity. The amendment to the claims is not intended to further limit the claims. No new matter is added.

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Truong for the helpful and courteous discussion of May 20, 2003. During the discussion, Applicants' U.S. representative pointed out that the compositions of the prior art references relied upon by the Examiner are not the compositions presently claimed.

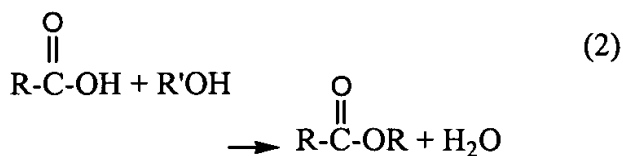
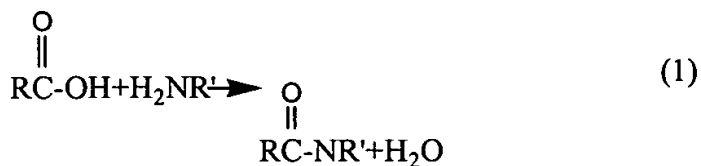
Present Claim 1 is drawn to an amino acid-containing polymer that is the addition product of an alkylene oxide with at least one of a homocondensate of a basic amino acid, a condensate of mixtures of two or more basic amino acids or a cocondensate of basic amino acids and compounds cocondensable with basic amino acids. Since the claimed amino acid-containing polymer is an addition product of an alkylene oxide with a basic amino acid-containing polymer, the composition must necessarily be obtained by reacting an alkylene oxide with an amino acid-containing polymer (page 10, line 35 through page 11, line 6). Independent Claim 16 is drawn to a process for producing alkoxyated, basic amino acid-containing polymers by reacting the homocondensate of a basic amino acid, condensate of a mixture of two or more basic amino acids, or cocondensates of basic amino acids and compounds that are cocondensable with a basic amino acid, with an alkylene oxide.

The Office rejected the present claims as anticipated by or, in the alternate, obvious in view of a patent to Mohr et al (U.S. 6,034,204). The Mohr et al patent is drawn to

condensation products obtained by condensing one or more basic amino acids with other materials that may be cocondensed with the amino acid. The condensation product of Mohr et al is obtained by reacting a mixture of the basic amino acid with the other compounds (column 7, lines 4-35; see also the Examples column 7, line 64 through column 9, line 50). Compounds that are cocondensable with the basic amino acids of Mohr et al include alkoxyated alcohols (see Abstract, line 15).

There is an important difference between the disclosure of Mohr et al and the presently claimed invention. In Mohr et al, all of the condensable compounds, including the basic amino acid and the compound cocondensable with the basic amino acid, are condensed together. In contrast, in the presently claimed invention a polymer containing condensed basic amino acid groups is reacted with an alkylene oxide to provide an addition product. The Office has asserted that the composition of Mohr et al may contain an alkoxyated alcohol and is therefore anticipatory of the presently claimed invention. Applicants note however that the condensation product obtained by condensing a basic amino acid and an alkoxyated alcohol is different from the addition product obtained by reacting an alkylene oxide with a basic amino acid-containing polymer.

The condensation of basic amino acids proceeds by reaction of an amine group with a carboxyl group to eliminate water (see Equation 1 below). The condensation product obtained by reacting a carboxylic acid functionality with an alcohol is an ester (see Equation 2 below).



It is commonly known in the art that condensation reactions take place by the elimination of a small molecule such as water (see "Organic Chemistry", 2nd ed., T.W.G. Solomons, John Wiley & Sons, (1980), pp. 802-804 copy attached for convenience). An addition product of an amine group present on, for example, a polymerized basic amino acid with an alkylene oxide provides a secondary amine such as a β -hydroxyamine (see "Advanced Organic Chemistry", 3rd ed., J. March, John Wiley & Sons, (1985), pp. 368-369 - copy attached for convenience). The hydroxyl group of the resulting secondary amine can then react with further equivalents of the alkylene oxide to product an alkoxyated material (page 11, lines 24 through page 12, line 2). Therefore, the addition product obtained by reacting an alkylene oxide with a basic amino acid-containing polymer provides an alkoxyated basic amino acid-containing polymer that is different from the alkoxyated basic amino acid-containing polymer obtained by cocondensing a basic amino acid in the presence of an alcohol. The product of the prior art is formed when an alcohol is condensed with a carboxylic functionality on an amino acid to provide an ester, whereas the alkylene oxide of the presently claimed invention reacts with an amine group.

Therefore, the presently claimed compositions are not the same as the compositions of Mohr et al because the claimed compositions have different bond connectivity in comparison to the prior art compositions. Moreover, the Mohr et al patent does not disclose or suggest the reaction of the condensed basic amino acid-containing polymer with an alkylene oxide. Applicants submit the presently claimed composition and presently claimed process for obtaining a product by reacting a basic amino acid-containing polymer with an alkylene oxide are not disclosed or suggested in the prior art reference applied by the Examiner. Applicants therefore respectfully request the withdrawal of the rejections.

On page 3, second paragraph of the Office Action it appears that the Office is suggesting that an excess of alkylene oxide is present during the condensation of the prior art

basic amino acid and alkoxyated alcohol. Applicants submit that Mohr et al does not disclose the reaction/condensation of a basic amino acid with a mixture of an alcohol and an alkylene oxide, but rather discloses the condensation of a basic amino acid with an alcohol that is an addition product of the alcohol with from 100 to 200 mol of an alkylene oxide. Therefore, Mohr et al is disclosing the condensation of an alkoxyated alcohol with a basic amino acid and is not disclosing the reaction of a condensation product of a basic amino acid with an alcohol with alkylene oxide.

Applicants submit the presently claimed invention is novel and not obvious in view of the prior art references relied upon by the Examiner and respectively request the withdrawn of the rejections.

Respectfully submitted,

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